Prof. James Sully contributes an amusing article to the *National Review*, on "The Humorous Aspect of Childhood." Some of the stories he tells in illustration of the simplicity and openness of child-nature deserve repetition here. The little boy who, in describing a fat lady, said she was just like a seal, used a singularly appropriate simile; for the human figure bereft by its obesity of the neck and waist divisions does grow seal-like. Then the purely arbitrary character of many of our language-forms affords opportunities for such remarks as that of the small boy who spoke of Charles the First's body having been cut off from his head. Another example of this childish tendency to rearrange things is supplied by the remark of a boy of five, who being asked whether the baby was christened, answered with alacrity, "No, she isn't christened, but she's vaccinated." Children are entirely anthropomorphic, believing that things about them have some mysterious relation to them. This is exemplified by the story of a child who quaintly remarked to an older child that seemed frightened on hearing about earthquakes, "They don't have earthquakes in little towns like this." Prof. Sully remarks on this: "The words suggest that the little comforter conceived of the earthquake as something which was specially designed for human spectators, to throw them into cold shudders, or possibly to electrify them with the delicious excitement of danger, according to their temperaments, and which would not therefore be brought on the scene where there was not a full house, so to speak. The saying seems to me full of the characteristic quaintness of child-thought. It is so deliciously comical to us who know, or fancy we know, what these alarming oscillations of the earth's surface really are, to have them thus turned by the naive conceit of the child-mind into a kind of show. Yet may we not here too detect an exaggeration of something in older people's thought about the universe, and in smiling at the crudity of the child's whimsical fancy be half-quizzing our own occasional lapses from the perfectly detached and unimpassioned point of view of science?" All who are interested in child-thought and child-observation should read Prof. Sully's collection of stories. The pity of it is that our educational system should so effectually crush the faculties of quick and acute observation and logical reasoning possessed by children.

Prof. John Trowbridge describes experiments with Röntgen rays in *Scribner's Magazine*, under the title "The New Photography by Cathode Rays." He refers to the new actinic rays as "cathode rays" throughout his article. An interesting illustration accompanying his article is a double picture of the Röntgen shadow of a turkey's wing, taken by rays from two cathodes slightly separated from one another. By measuring the distance between the double images, the depth of the shot can be estimated by triangulation.

Among the articles of minor scientific interest, we notice one on the boundary dispute between Great Britain and Venezuela in the *National*, by the editor, Mr. L. J. Maxse. This is accompanied by two maps from the recent Venezuela Blue-book. In *Longman's*, Mr. Fred Whishaw has a sympathetic paper on life in a pine-forest in winter. *Chambers's Journal* has its usual complement of information articles, the most noteworthy being on "Toad-Lore," "Modern Gunpowder and its Development," "Pets and Pests in Barbadoes," and "Bird-Catching in Heligoland." The *Humanitarian* has two papers on "University Degrees for Women," in one of which Dr. A. W. Verrall states the case for degrees, while Mrs. B. J. Johnson writes for the opposition. In the *Strand Magazine* is an instructive account of "Diamond Mining in South Africa," by Mr. J. Bucknall Smith. Finally, scientific phonographers will find much to interest them in the clearly-printed pages of the *Phonographic Quarterly Review*.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

The Education Bill of Sir John Gorst, to which reference has already been made in these columns, makes, it is true, several provisions for secondary education, but it can hardly be supposed that the comparatively few recommendations under this heading are to be the only outcome of the prodigious labours of the recent Commission. The county education authority, the constitution of which was explained in a note last week, may, amongst other matters, aid any school in the provision of secondary education, or, with the consent of the Education Department, may take a transfer of any secondary school. It may also establish such schools; found and maintain scholarships or exhibitions; supply, or aid in supplying, teachers; make inquiries with respect to the sanitary condition of the school-buildings (including boarding-houses) of any school within their county; and make inquiries with respect to the education given by any school within their county. Schools which in the opinion of the Education Department are of a non-local character are, however, excepted. The education authority may then take such measures as they think fit for giving information to the public with respect to the result of such inquiries. The county education authority is to be given power to *aid* any establishment or organisation for the training of teachers, but there seems to be no provision for the formation of new training schools or colleges. Provision is made for the transfer of higher grade board schools to the county authority, either at their own request or that of the School Board concerned. If the education authority desire, they may make it one of the conditions of any grant to a secondary school that representatives of the authority be added to the trustees or governing body of the school. The consent of the trustees being given, such representatives will become for all purposes members of the governing body of the school. It is further arranged that the amount which can be raised under the Technical Instruction Act, 1889, shall not be exceeded. One satisfactory point is that, in the event of this Bill becoming law, it will be impossible to have any further diversion of the money available under the Local Taxation Act, 1890, to purposes other than those of education. These funds are, moreover, to be in the future available for all degrees and kinds of secondary education, and not only for technical instruction.

At the meeting of the Manchester City Council, held on Wednesday, April 1, Mr. Alderman Hoy reported that the Co-ordination Sub-committee of the Technical Instruction Committee had been dissolved. This Sub-committee was composed of representatives of the principal educational institutions in that city, and has been successful in arranging for the better co-ordination of the spheres of work of these institutions, and has so prevented over-lapping. It has been successful in bringing the School Board into line with the work of the Committee specially concerned with technical education, and has done very valuable work in other ways. We hope to see other large towns following the example thus successfully set by Manchester, for it is certain that by friendly conferences of this sort the best results for education will be obtained. It has been decided to appoint an Advisory Committee in the place of that dissolved, which will comprise the Chairman of the Technical Instruction Committee (Mr. Alderman Hoy), the Chairman of the School Board, the Principal of Owens College, and the High Master of the Grammar School. This Sub-committee will have power to call together the General Committee whenever they deem it necessary in view of any educational emergency.

SCIENTIFIC SERIALS.

Bulletin of the American Mathematical Society, vol. ii. No. 6, March 1896.—"The three great problems of antiquity considered in the light of modern mathematical research" is a review, by Miss C. A. Scott, of Prof. Klein's Festschrift for the third meeting of the Association for the Advancement of Mathematical and Scientific Teaching in the Gymnasia, entitled "Vorträge über ausgewählte Fragen der Elementargeometrie." Of course the problems intended are the duplication of the cube, the trisection of an angle, and the quadrature of the circle. The pamphlet is divided into two parts: the first deals with algebraic numbers, the second with transcendental numbers. The analysis is very full, so that the reader gets a thoroughly good idea of Prof. Klein's work. "But while reading this brilliant exposition it is difficult to avoid cherishing a lurking regret, which is possibly very ungracious, that Klein could not himself spare time to arrange his work for publication; for though we have here in full measure the incisive thought and cultured penetration which together make even strict logic seem intuitive, yet at times we miss the minute finish and careful proportion of parts that we feel justified in expecting from him. And yet revision and consolidation might have seriously interfered with the graphic simplicity of these chapters, and left them less adapted to their special purpose." From Miss Scott's account we are thoroughly disposed to endorse her wish that the

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pamphlet should be translated for the use of corresponding English associations. Why should not she undertake the task, if she has the leisure?—Prof. A. S. Chessin gives an abstract of Painlevé's Lecons sur l'intégration des équations differentielles de la Mécanique et Applications, and of his Lecons sur le Frottement.—The other articles are a geometric proof of a fundamental theorem concerning unicursal curves, by Prof. Osgood; Notes on the expression for a velocity-potential in terms of functions of Laplace and Bessel, by Prof. J. McMahon, and an additional note on divergent series by Prof. A. S. Chessin.—In the Notes we are told that the German Mathematical Society, at its meeting held at Lübeck, in September last, decided to combine in one volume the official reports of the Vienna and Lübeck meetings.—A list of papers, in addition to that given in vol. i. of the *Bulletin*, completes the tale of papers read at the Vienna meeting (1894), and the titles and names of authors for the Lübeck meeting are also given here.

American Meteorological Journal, March.—The diurnal oscillation of atmospheric pressure at the Peruvian stations of Harvard College Observatory, by Prof. S. I. Bailey. (A note upon this paper will be found in our issue of March 26, p. 493).—Cyclones and anticyclones, by Prof. H. A. Hazen. The author gives an epitome of the theories and researches of the principal investigators, and makes a special appeal for further atmospheric exploration. He considers that the most promising line of research is in connection with the observation of atmospheric electricity, and some useful hints are given with reference to the most promising means of increasing our knowledge by observations on high mountains and balloons, either manned or carrying recording instruments only.

Himmel und Erde, March.—This number contains many attractive contributions.—Herr Paul Spies writes on the Röntgen X-rays, this article being the sum and substance of a lecture delivered by him in the Urania at Berlin. Johann Christian Doppler and the "principle" connected with his name is the subject treated of by Dr. Julius Scheiner. That which is generally known about Doppler's life has been drawn from the biographical notice contained in the almanack of the Kaiserl. Akademie der Wissenschaft in Wien, which was written by the, then, general Secretary of the Academy, Prof. Strotter. With the help of Prof. Safarik, Dr. Scheiner is here able to increase our information on many points of interest, by publishing for the first time some characteristic notes gathered from Prof. Koristka, of the German Polytechnic in Prague.—The *Mitteilungen* contain several astronomical notes. A reference, with an illustration, is made to the Fabricius monument which was erected at Osteel last November. This monument consists of the goddess of astronomy in a sitting position, and looking towards the sky, holding in her right hand a small telescope, and supporting with her left a tablet on which in relief is seen the solar disc with some spots on his surface. The time of rotation of Jupiter and the cosmical origin of meteors form subjects for the next two notes, the latter referring more especially to Niessl's investigation, which appeared in the *Denkschriften der Wiener Akademie*. Two other notes refer to the "Internationale Erdmessung" and to the possible inconstancy of the length of a day, this latter having been raised by Prof. Deichmüller, who considers that very small secular variations may be present, although they have not as yet been detected.

SOCIETIES AND ACADEMIES.

London.

Royal Society, March 19.—"On the Spinal-root Connections and Ganglion-cell Connections of the Nerve-fibres which produce Contraction of the Spleen." By Prof. E. A. Schäfer, F.R.S., and B. Moore.

We have investigated, in four dogs, the effects upon the spleen volume of excitation of the thoracic and lumbar nerve-roots.

The following are the results which we have obtained from excitation of the nerve-roots from the second postcervical to the fifteenth postcervical inclusive. In none of the four experiments did excitation of the *second* postcervical (second dorsal) pair produce any contraction of the spleen. In none of the four experiments did excitation of the *fifteenth* postcervical pair produce any contraction of the spleen. In three out of the four experiments a distinct contraction of the spleen was got on stimulation of all the roots on both sides from the third postcervical to the fourteenth postcervical inclusive. This effect was relatively smaller on stimulation of the third and fourth postcervical nerves and of the eleventh to the fourteenth postcervical than on stimulation of the intermediate pairs, the most marked effects being obtained from the sixth, seventh, and eighth pairs. In all cases the effect was got, as already stated, from the nerve-roots of *both sides*, but with each nerve pair it comes out as an almost constant occurrence that a decidedly less marked effect is obtained with the same strength of stimulus upon the right side than upon the left.

We have found that after intravenous injection of small doses of nicotine, the effect upon the spleen of stimulating the nerve-roots may entirely disappear, while stimulation of the splanchnics is still quite effective. We infer, therefore, that the nerve-fibres which produce contraction of the spleen have a cell station in the prevertebral chain of ganglia.

"Problems in Electric Convection." By G. F. C. Searle.

The paper contains an investigation into the distribution of electric and magnetic forces which are called into play when some electro-magnetic systems are made to move with uniform velocity through the ether. Maxwell's theory is employed in obtaining the fundamental equations, and it is found that though the electric and magnetic forces, E and H, have generally no potential, still they can be derived from two functions Ψ and Ω; the differential equations satisfied by these functions are obtained, and are employed to obtain the solutions for various cases and conditions.

Zoological Society, March 17.—Prof. G. B. Howes in the chair.—Mr. Sclater called the attention of the meeting to the prospectus of the great work of the German Zoological Society, to be called "Das Tierreich," spoken of at the last meeting, and gave some particulars as to the mode in which the plan was intended to be carried out. Mr. Sclater also called attention to the appointment of a Committee on Zoological Nomenclature at the International Zoological Congress held at Leyden last year.—A communication was read from Lieut.-Colonel C. T. Bingham, containing a contribution to the knowledge of the hymenopterous fauna of Ceylon.—A communication was read from Mr. Edward T. Browne, on British Hydroids and Medusæ. Mr. A. Smith Woodward read a paper on some extinct fishes of the Teleostean family Gonorhynchidæ.

Entomological Society, March 18.—Prof. Raphael Meldola, F.R.S., President, in the chair.—Mr. C. G. Barrett exhibited a series of drawings of varieties of British Lepidoptera in the collection of Mr. S. J. Capper, of Huyton Park, Liverpool. The drawings, which were beautifully executed, were by Mr. S. L. Mosley, of Huddersfield, and comprised 389 figures, representing 139 species, of which 33 were butterflies and 50 moths.—Mr. J. J. Walker, R.N., exhibited a specimen of *Procas armillatus*, taken on Durland Hill, near Chatham, during the present month.—Herr Jacoby exhibited a specimen of *Loxoprosopus ceramboides*, Guér., from Brazil.—Mr. E. E. Green exhibited the eggs of some species of Locustidæ extracted from the stem of a young cinchona tree at Punduloya, Ceylon. He said the species of the parent insect was undetermined; it was possibly either a *Cymatomera* or a *Cyrtophyllus*, both of which possess large sabre-shaped ovipositors. A slit half inch deep and more than two inches long had been cut into the hard wood, in which the eggs had been symmetrically deposited, edge to edge, with the coloured part inwards. The greater part of each egg was of fine texture, and coloured green; but at the extremity from which the young insect would make its exit the egg-shell was soft, pliant, and beautifully reticulated. Mr. McLachlan and Dr. Sharp, F.R.S., made some remarks on the subject.—Mr. Green read a short paper entitled "Notes on *Dyscritina longisetosa*, Westw." He remarked that drawings of the species had been exhibited by him at a recent meeting of the Society. Dr. Sharp said Mr. Green seemed to think that the insect was an earwig, but he could not accept it as belonging to the Forficulidæ. He thought that further specimens for examination were required before attempting to determine its position, which was quite doubtful at present.—Mr. W. F. H. Blandford communicated a paper entitled "Descriptions of New Oriental *Scolytidæ*."

Linnean Society, March 19.—Mr. C. B. Clarke, F.R.S., President, in the chair.—Mr. Clement Reid exhibited fruits of *Naias marina* from a peaty deposit below mean-tide level in the new docks at Barry, South Wales. In Britain it had only been found living at a single locality in Norfolk, but in a fossil con-

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